



R & M Forge & Fittings

6455 Wesco Way

Houston, TX 77041

(713) 896 - 4081 (713) 896 - 6206

www.rmforge.com

MATERIAL TEST REPORT

Shipped to:

Date: 03/25/2022

Customer:	PO# 2022-1346	Line Item: 1	R&M S/O#: 45537
	DESCRIPTION: ROUGH MACHINED 1/4" ALLOWANCE - 250 RMS 28" OD X 3.50" THK		
	TAG: JOB# 6108		
	HEAT NUMBER: S8987		QTY. Shipped: 2 PCS.
Spec: ASTM A182 F316/316L	2021 EDITION / LATEST ADDENDA		Mill: ELLWOOD (USA)

	C	MN	P	S	SI	NI	CR	MO	CU	V	CB/NB
LADLE	.024	1.48	.031	.004	.34	11.31	17.42	2.06	.46	.067	
PRODUCT											
	N	AL	CE	FE	TI	W	SB	SN	AS	CB+TA	J-FACTOR
LADLE	.0741	.005									
PRODUCT											

Mechanical Properties	
YIELD (PSI) 0.2% OFFSET	38,900
TENSILE (PSI)	82,200
ELONG. (%) 2"	57.0
R/A (%)	78.0
HARDNESS	163 BHN
CVN (FT/LBS) AVG.	
LAT. EXP.	
SHEAR (%)	
CVN TEMP.	

Heat Treatment
SOLUTION ANNEALED @ 1900F FOR 3.5 HOURS / HOLD
SOLUTION ANNEALED @ 1950F FOR 0.5 HOUR / RAMP
SOLUTION ANNEALED @ 1950F FOR 1 HOUR / HOLD

Requirements & Other Results
EF LR VD
FULLY KILLED
PER EN 10204 3.1
PER NACE MR0175

COMMENTS:
THIS PRODUCT HAS NOT COME IN CONTACT WITH MERCURY OR MERCURY COMPOUNDS. NO WELDING PERFORMED.

CERTIFICATION OF CONFORMANCE
THIS IS TO CERTIFY THAT THE ITEMS DESCRIBED ON THIS DOCUMENT ARE IN FULL CONFORMANCE WITH ALL REQUIREMENTS OF YOUR PURCHASE ORDER AND MATERIAL SPECIFICATIONS.

We hereby certify that all test results and process information contained herein are correct and true as contained in the records of the company.
This 25TH day of March 2022


Zachery Atkinson / Quality Assurance



CERTIFIED TEST REPORT

Date: 3/9/22

Report of Tests of: **(3), 20" RD Billets - Grade ASTM A182 316/316L Mult(s)**

For Company:

Customer's Order: **13512-1**

Date of Order: **8/24/21**

Our Shop Order: **H000263824**

Specification: **MPS-1800 REV. NEW**

CHEMICAL ANALYSIS

Heat #	C	Mn	P	S	Si	Ni	Cr	Mo	V	Cu	Al	N		
S8987	.024	1.48	.031	.004	.34	11.31	17.42	2.06	.067	.46	.005	.0741		

Material Certified: S8987-01-T1 ; S8987-03-B1/T1

The material was melted using the electric furnace-ladle refined-vacuum oxygen decarburization-vacuum degassed process and was subsequently bottom poured.

The material was fully killed.

Meets the intent of ROHS, REACH CONFLICT FREE MINERALS SEC Legislation.

Capable of passing intergranular corrosion in accordance with ASTM A262 practice E.

This material was melted and produced in the USA, in accordance with the ENS QA Manual Rev. 5 dated 05/03/2021 which meets the intent of the latest revisions of ISO 10012-1, MIL-I-45208, NCA-3800 and 10CFR50 Appendix B for quality assurance, inspection and calibration systems. ENS QMS is certified to AS9100D and ISO 9001:2015.

Material forged to 20" RD Billet from 34"x47" ingot.

This material meets the chemistry requirements of ASTM A182/A182M-21, ASTM A473-19, and ASTM A479-20 for UNS S31600 (316) and S31603 (316L); Material manufactured in accordance with PED 2014/68/EU Annex 1, Paragraph 4.3 with CTR in compliance with EN 10204 3.1

This material meets the chemistry requirements of ASTM A240-20 for UNS S31600 (316) and S31603 (316L)

Material capable of MPS-1800 rev NEW

I certify that the reported results and statements of the certificate represent the actual attributes of the material furnished and are in full compliance with all purchase order/ specification requirements. Note: The recording of false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under Federal Statute. During the manufacturing process, tests, and inspections, the material did not come in direct contact with mercury or any of its compounds nor with any mercury containing device employing a single boundary of containment. No welding or weld repair was performed on this material. The material was produced free of radioactive elements.



Judith G. Stevens
Manager of Quality Assurance

Company:

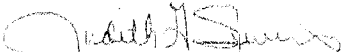
Heat: **S8987**

Order: **13512-1**

CERTIFIED TEST REPORT REVISION LOG

Date	Approved By	Description
12/10/2021	JStevens	Modified Report of Tests Description
12/10/2021	JStevens	Statements: Removed [Material Certified: S8987-03-B1]
12/10/2021	JStevens	Statements: Added [Material Certified: S8987-03-B1, T1]
12/10/2021	JStevens	Lot: Added S8987-03-T1
3/9/2022	JStevens	Modified Report of Tests Description
3/9/2022	JStevens	Statements: Removed [Material Certified: S8987-03-B1, T1]
3/9/2022	JStevens	Statements: Added [Material Certified: S8987-01-T1, S8987-03-B1/T1]
3/9/2022	JStevens	Lot: Added S8987-01-T1

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 Judith G. Stevens
 Manager of Quality Assurance